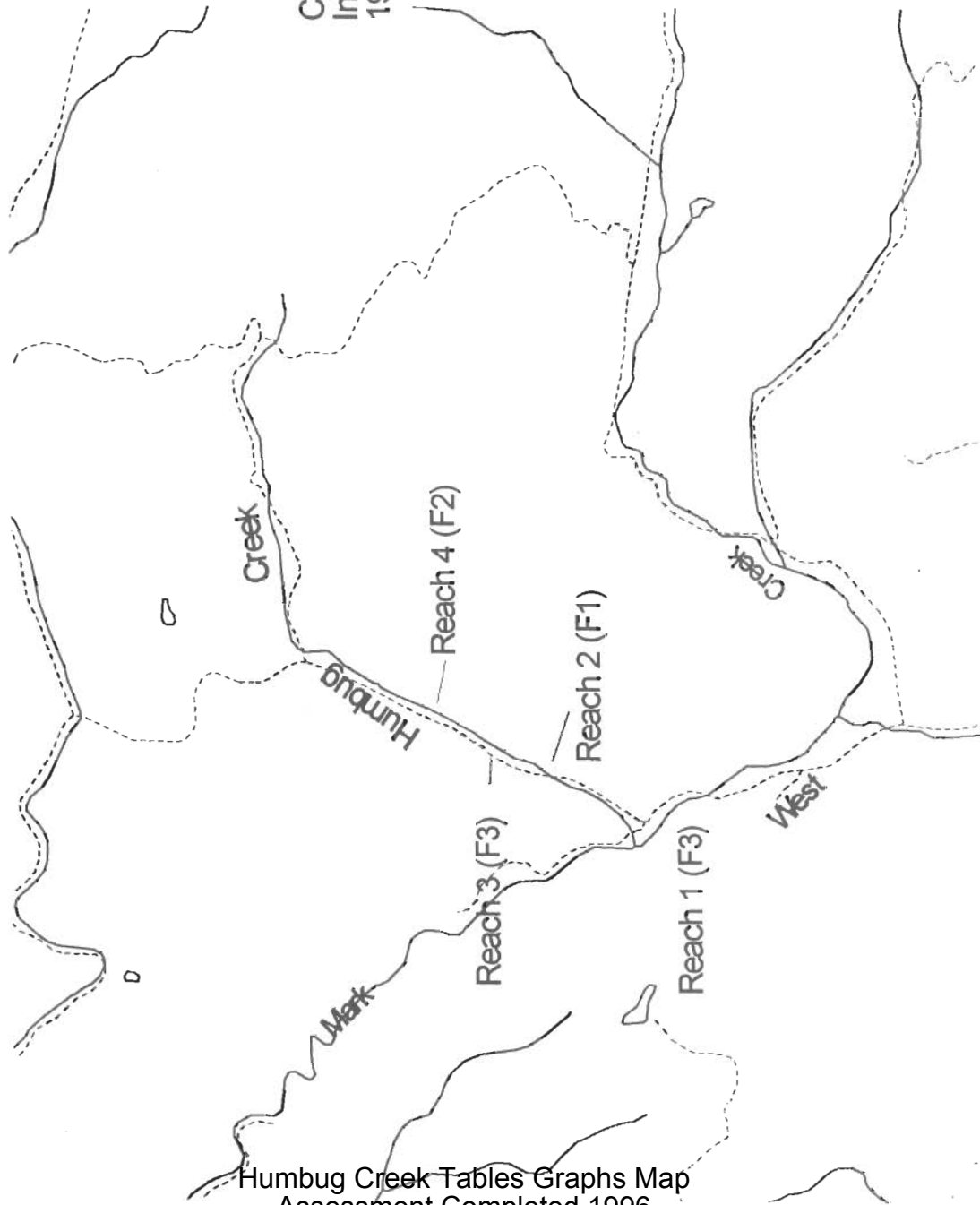


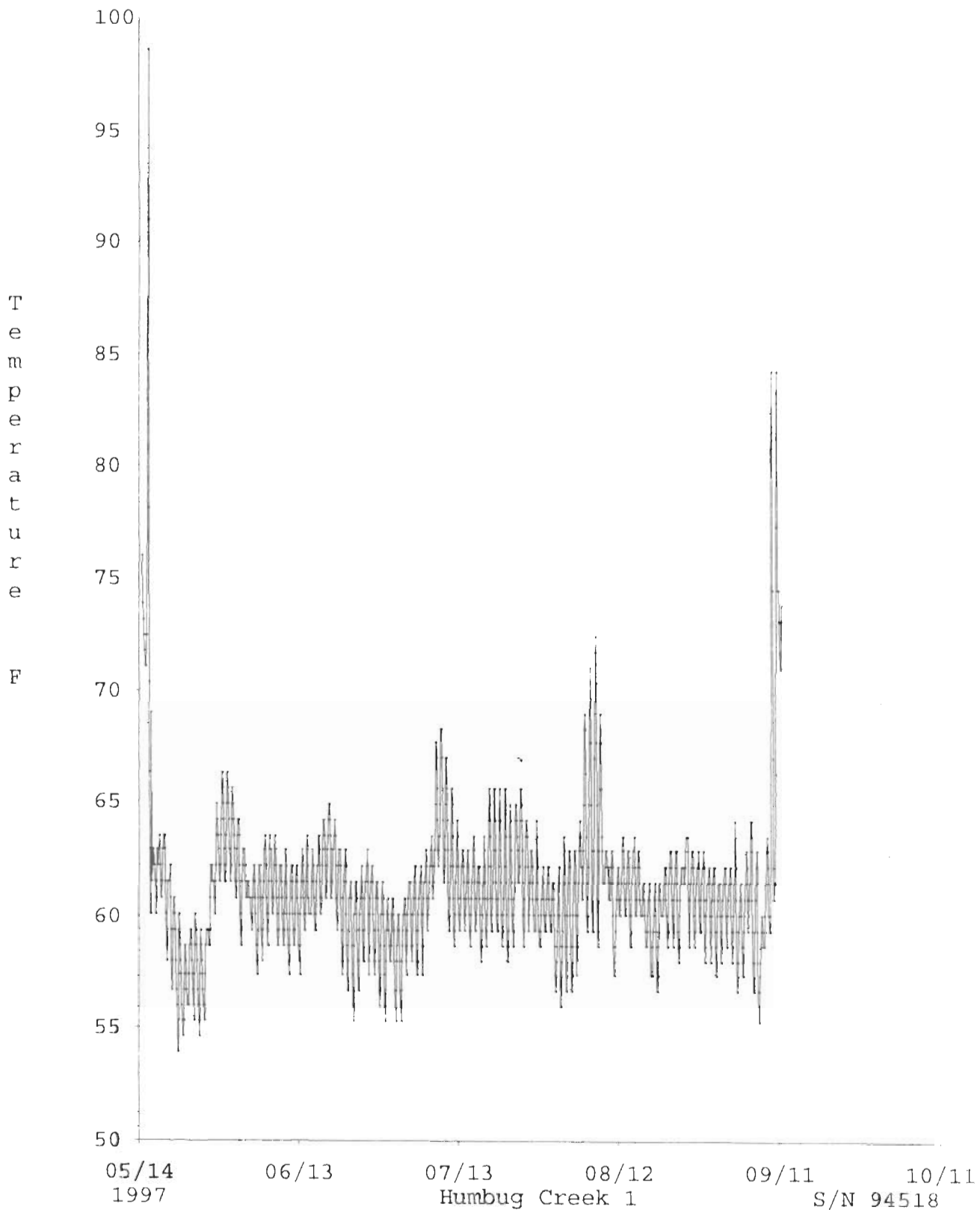
# Humbug Creek



California Department of Fish and Game  
Inland Fisheries Division  
1997

Roads  
Streams





Humbug Creek

Drainage: Mark West Creek, Russian River

Table 1 - SUMMARY OF RIFFLE, FLATWATER, AND POOL HABITAT TYPES

Survey Dates: 06/04/96 to 06/06/96

Confluence Location: QUAD: MARK WEST LEGAL DESCRIPTION: T8NR7WS20 LATITUDE: 38°31'12" LONGITUDE: 122°39'33"

HABITAT UNITS	UNITS FULLY MEASURED	HABITAT TYPE	HABITAT PERCENT OCCURRENCE	MEAN LENGTH (ft.)	TOTAL LENGTH (ft.)	PERCENT TOTAL LENGTH	MEAN WIDTH (ft.)	MEAN DEPTH (ft.)	MEAN AREA (sq.ft.)	ESTIMATED TOTAL AREA (sq.ft.)	ESTIMATED TOTAL VOLUME (cu.ft.)	MEAN RESIDUAL POOL VOL (cu.ft.)	MEAN SHELTER RATING
45	2	RIFFLE	35	56	2505	35	8.2	0.5	444	19999	208	9376	0
20	2	FLATWATER	16	67	1345	19	8.3	0.6	523	10462	330	6605	0
63	20	POOL	49	52	3294	46	9.6	1.6	499	31441	836	52669	708
TOTAL UNITS	24				TOTAL LENGTH (ft.)	7144			TOTAL AREA (sq. ft.)	61902	TOTAL VOL. (cu. ft.)	68650	

Humbug Creek

Drainage: Mark West Creek, Russian River

Table 2 - SUMMARY OF HABITAT TYPES AND MEASURED PARAMETERS

Survey Dates: 06/04/96 to 06/06/96

Confluence Location: QUAD: MARK WEST LEGAL DESCRIPTION: T8NR7WS20 LATITUDE: 38°31'12" LONGITUDE: 122°39'33"

HABITAT UNITS	UNITS FULLY MEASURED	HABITAT TYPE	HABITAT OCCURRENCE	MEAN LENGTH	ft.	%	MEAN WIDTH	ft.	MEAN DEPTH	ft.	MAXIMUM DEPTH	MEAN AREA	sq.ft.	TOTAL AREA	sq.ft.	MEAN VOLUME	cu.ft.	TOTAL VOLUME	cu.ft.	MEAN RESIDUAL EST.	sq.ft.	MEAN SHELTER RATING	cu.ft.	MEAN CANOPY	%
18	1	LGR	14	56	1013	14	10	0.4	1.1	528	9497	219	3950	0	0	77									
20	0	HGR	16	59	1180	17	8	0.5	1.1	452	9044	238	4758	0	0	81									
4	1	CAS	3	47	187	3	5	0.6	2.1	230	920	136	545	0	10	66									
3	0	BRS	2	42	126	2	4	0.2	0.6	179	538	41	124	0	0	75									
1	0	POW	1	65	65	1	9	0.9	1.8	605	605	544	544	0	0	85									
5	1	GLD	4	45	224	3	9	0.7	1.8	424	2119	311	1555	0	0	82									
7	0	RUN	5	63	444	6	9	0.6	1.1	585	4097	346	2420	0	0	79									
7	1	SRN	5	87	612	9	7	0.6	1.2	520	3641	298	2085	0	0	85									
3	2	TRP	4	90	271	4	5	2.1	3.6	470	1409	1132	3395	1060	20	88									
25	9	MCP	20	49	1228	17	10	1.8	6.0	515	12878	952	23795	775	27	81									
9	3	STP	7	89	801	11	8	1.2	5.2	727	6544	920	8276	974	73	80									
8	2	LSR	6	36	286	4	10	1.1	2.6	350	2798	388	3105	242	23	80									
7	1	LSBK	5	44	311	4	10	1.5	2.2	444	3106	680	4762	508	12	75									
1	1	LSBO	1	37	37	1	7	1.2	1.8	260	260	312	312	260	100	70									
8	2	PLP	6	29	235	3	9	1.5	3.2	261	2091	458	3663	392	31	82									
2	0	DPL	2	63	126	2	17	2.4	3.6	1103	2205	2456	4913	2346	5	80									

Humbug Creek Tables Graphs Ma

TOTAL UNITS	TOTAL UNITS	LENGTH (ft.)	AREA (sq.ft.)	TOTAL VOL. (cu.ft.)
128	24	7144	61752	68202

Humbog Creek

Drainage: Mark West Creek, Russian River

Table 3 - SUMMARY OF POOL TYPES

Survey Dates: 06/04/96 to 06/06/96

Confluence Location: QUAD: MARK WEST LEGAL DESCRIPTION: T8NR7WS20 LATITUDE: 38°31'12" LONGITUDE: 122°39'33"

HABITAT UNITS	UNITS FULLY MEASURED	HABITAT TYPE	HABITAT PERCENT OCCURRENCE	MEAN LENGTH (ft.)	TOTAL LENGTH (ft.)	TOTAL PERCENT LENGTH	MEAN WIDTH (ft.)	MEAN DEPTH (ft.)	MEAN AREA (sq.ft.)	TOTAL AREA EST. (sq.ft.)	MEAN VOLUME (cu.ft.)	TOTAL VOLUME EST. (cu.ft.)	MEAN RESIDUAL POOL VOL. (cu.ft.)	MEAN SHELTER RATING
37	14	MAIN	59	62	2300	70	9.3	1.7	563	20831	959	35466	831	32
24	6	SCOUR	38	36	867	26	9.5	1.4	344	8249	498	11951	375	26
2	0	BACKWATER	3	63	126	4	16.8	2.4	1103	2205	2456	4913	2346	5
TOTAL UNITS 63	TOTAL UNITS 20			TOTAL LENGTH (ft.) 3294					TOTAL AREA (sq.ft.) 31286			TOTAL VOL. (cu.ft.) 52330		

Humbug Creek

Drainage: Mark West Creek, Russian River

Table 4 - SUMMARY OF MAXIMUM POOL DEPTHS BY POOL HABITAT TYPES

Survey Dates: 06/04/96 to 06/06/96

Confluence Location: QUAD: MARK WEST LEGAL DESCRIPTION: T8NR7NS20 LATITUDE: 38°31'12" LONGITUDE: 122°39'33"

UNITS MAX DPTH MEASURED	HABITAT TYPE	HABITAT PERCENT OCCURRENCE	<1 FOOT MAXIMUM DEPTH	<1 FOOT PERCENT OCCURRENCE	1-<2 FT. MAXIMUM DEPTH	1-<2 FOOT PERCENT OCCURRENCE	2-<3 FT. MAXIMUM DEPTH	2-<3 FOOT PERCENT OCCURRENCE	3-<4 FT. MAXIMUM DEPTH	3-<4 FOOT PERCENT OCCURRENCE	>=4 FEET MAXIMUM DEPTH	>=4 FEET PERCENT OCCURRENCE
3	TRP	5	0	0	0	0	0	2	67	1	33	0
25	MCP	40	0	0	5	20	15	60	33	12	2	8
9	STP	14	0	0	4	44	3	33	1	11	1	11
8	LSR	13	0	0	6	75	2	25	0	0	0	0
7	LSbk	11	0	0	2	29	5	71	0	0	0	0
1	LSBo	2	0	0	1	100	0	0	0	0	0	0
8	PLP	13	0	0	4	50	2	25	2	25	0	0
2	DPL	3	0	0	0	0	1	50	1	50	0	0

TOTAL  
UNITS  
63

# Humbug Creek

Drainage: Mark West Creek, Russian River

Table 5 - Summary of Shelter by Habitat Type

Survey Dates: 06/04/96 to 06/06/96

Confluence Location: QUAD: MARK WEST LEGAL DESCRIPTION: T8NR7WS20 LATITUDE: 38°31'12" LONGITUDE: 122°39'33"

UNITS MEASURED	SHelter TYPE	HABITAT	% TOTAL UNDERCUT	% TOTAL SWD	% TOTAL LWD	% TOTAL ROOT MASS	% TOTAL TERR. VEGETATION	% TOTAL AQUATIC VEGETATION	% TOTAL WHITE WATER	% TOTAL BOULDERS	% TOTAL BEDROCK LEDGES
18	5	LGR	0	0	0	0	0	0	0	0	0
20	1	HGR	0	0	0	0	0	0	0	0	0
4	1	CAS	95	0	0	0	0	0	5	0	0
3	1	BRS	0	0	0	0	0	0	0	0	0
1	0	POW	0	0	0	0	0	0	0	0	0
5	1	GLD	0	0	0	0	0	0	0	0	0
7	2	RUN	0	0	0	0	0	0	0	0	0
7	1	SRN	0	0	0	0	0	0	0	0	0
3	3	TRP	0	0	0	0	0	0	0	4	96
25	23	MCP	58	0	0	6	8	0	0	13	15
9	4	STP	34	0	0	3	0	0	1	62	0
8	8	LSR	18	0	0	33	15	0	0	33	0
7	7	LSBK	33	0	0	20	0	0	0	25	22
1	1	LSBQ	0	0	0	0	0	0	0	100	0
8	8	PLP	32	0	0	0	0	0	2	24	42
2	2	DPL	0	0	0	0	0	0	0	86	14
128	68		38	0	0	6	4	0	1	30	22
63	56		37	0	0	6	4	0	1	30	22

Humbog Creek

Drainage: Mark West Creek, Russian River

Table 6 - SUMMARY OF DOMINANT SUBSTRATES BY HABITAT TYPE

Survey Dates: 06/04/96 to 06/06/96

Confluence Location: QUAD: MARK WEST LEGAL DESCRIPTION: T8NR7WS20 LATITUDE: 38°31'12" LONGITUDE: 122°39'33"

TOTAL HABITAT UNITS	UNITS SUBSTRATE MEASURED	HABITAT TYPE	% TOTAL SILT/CLAY DOMINANT	% TOTAL SAND DOMINANT	% TOTAL GRAVEL DOMINANT	% TOTAL SM COBBLE DOMINANT	% TOTAL LG COBBLE DOMINANT	% TOTAL BOULDER DOMINANT	% TOTAL BEDROCK DOMINANT
2	LGR	0	0	0	0	100	0	0	0
1	HGR	0	0	0	0	0	100	0	0
3	CAS	0	0	0	0	0	0	33	67
2	BRS	0	0	0	0	0	0	0	100
1	POW	0	0	0	0	0	0	0	100
2	GLD	0	0	0	0	50	0	0	50
1	RUN	0	0	0	0	0	0	0	100
2	SRN	0	0	0	0	0	100	0	0
2	TRP	0	0	0	0	0	0	0	100
9	MCP	0	0	78	11	0	0	0	11
3	STP	0	0	33	0	0	33	0	33
2	LSR	0	0	0	0	0	50	50	0
1	LSBK	0	0	100	0	0	0	0	0
1	LSBo	0	0	0	0	0	0	100	0
2	PLP	0	0	0	0	0	0	0	100
0	DPL	0	0	0	0	0	0	0	0



Humbug Creek

APPENDIX A. Summary of Mean Percent Vegetative Cover for Entire Stream

Mean Percent Canopy	Mean Percent Evergreen	Mean Percent Deciduous	Mean Right bank % Cover	Mean Left Bank % Cover
79.11	6.43	93.57	96.05	96.45

APPENDIX B.

Mean Percentage of Dominant Substrate

Dominant Class of Substrate	Number Units Right Bank	Number Units Left Bank	Percent Total Units
Bedrock	26	24	65.79
Boulder	2	1	3.95
Cobble/Gravel	6	4	13.16
Silt/clay	4	9	17.11

Mean Percentage of Dominant Vegetation

Dominant Class of Vegetation	Number Units Right Bank	Number Units Left Bank	Percent Total Units
Grass	0	0	0
Brush	0	0	0
Deciduous Trees	34	35	90.79
Evergreen Trees	4	3	9.21
No Vegetation	0	0	0

# APPENDIX C. FISH HABITAT INVENTORY DATA SUMMARY

STREAM NAME: Humbug Creek  
 SAMPLE DATES: 06/04/96 to 06/06/96  
 STREAM LENGTH: 7052 ft.  
 LOCATION OF STREAM MOUTH:  
 USGS Quad Map: MARK WEST  
 Legal Description: T8NR7WS20

Latitude: 38°31'12"  
 Longitude: 122°39'33"

## SUMMARY OF FISH HABITAT ELEMENTS BY STREAM REACH

### STREAM REACH 1 (Units 1-48)

Channel Type: F3  
 Channel Length: 2527 ft.  
 Riffle/Flatwater Mean Width: 10 ft.  
 Total Pool Mean Depth: 1.6 ft.  
 Base Flow: 2.4 cfs  
 Water: 62-66°F Air: 75-82°F  
 Dom. Bank Veg.: Deciduous Trees  
 Bank Vegetative Cover: 96%  
 Dom. Bank Substrate: Bedrock  
 Embeddness Value: 1. 27% 2. 64%

Mean Canopy Density: 80%  
 Evergreen Component: 5%  
 Deciduous Component: 95%  
 Pools by Stream Length: 45%  
 Pools >=3 ft. deep: 14%  
 Mean Pool Shelter Rtn: 22  
 Dom. Shelter: Undercut Banks  
 Occurrence of LOD: 0%  
 Dry Channel: 0 ft.

3. 9% 4. 0%

### STREAM REACH 2 (Units 49-68)

Channel Type: F1  
 Channel Length: 1091 ft.  
 Riffle/Flatwater Mean Width: 7 ft.  
 Total Pool Mean Depth: 1.7 ft.  
 Base Flow: 2.4 cfs  
 Water: 62-64°F Air: 78-78°F  
 Dom. Bank Veg.: Deciduous Trees  
 Bank Vegetative Cover: 98%  
 Dom. Bank Substrate: Bedrock  
 Embeddness Value: 1. 0% 2. 60%

Mean Canopy Density: 82%  
 Evergreen Component: 5%  
 Deciduous Component: 95%  
 Pools by Stream Length: 55%  
 Pools >=3 ft. deep: 18%  
 Mean Pool Shelter Rtn: 25  
 Dom. Shelter: Bedrock Ledges  
 Occurrence of LOD: 0%  
 Dry Channel: 0 ft.

3. 0% 4. 40%

### STREAM REACH 3 (Units 69-91)

Channel Type: F3  
 Channel Length: 1580 ft.  
 Riffle/Flatwater Mean Width: 8 ft.  
 Total Pool Mean Depth: 1.6 ft.  
 Base Flow: 2.4 cfs  
 Water: 62-64°F Air: 70-78°F  
 Dom. Bank Veg.: Deciduous Trees  
 Bank Vegetative Cover: 97%  
 Dom. Bank Substrate: Bedrock  
 Embeddness Value: 1. 0% 2. 91%

Mean Canopy Density: 81%  
 Evergreen Component: 1%  
 Deciduous Component: 99%  
 Pools by Stream Length: 39%  
 Pools >=3 ft. deep: 17%  
 Mean Pool Shelter Rtn: 30  
 Dom. Shelter: Bedrock Ledges  
 Occurrence of LOD: 0%  
 Dry Channel: 0 ft.

3. 0% 4. 9%

### STREAM REACH 4 (Units 92-127)

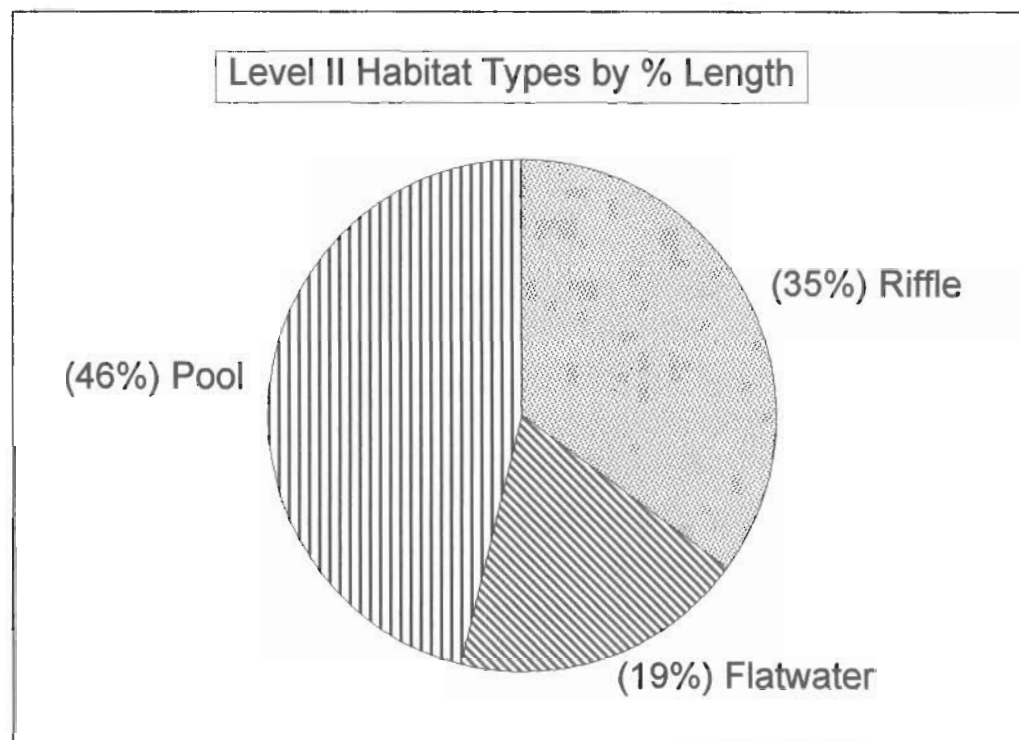
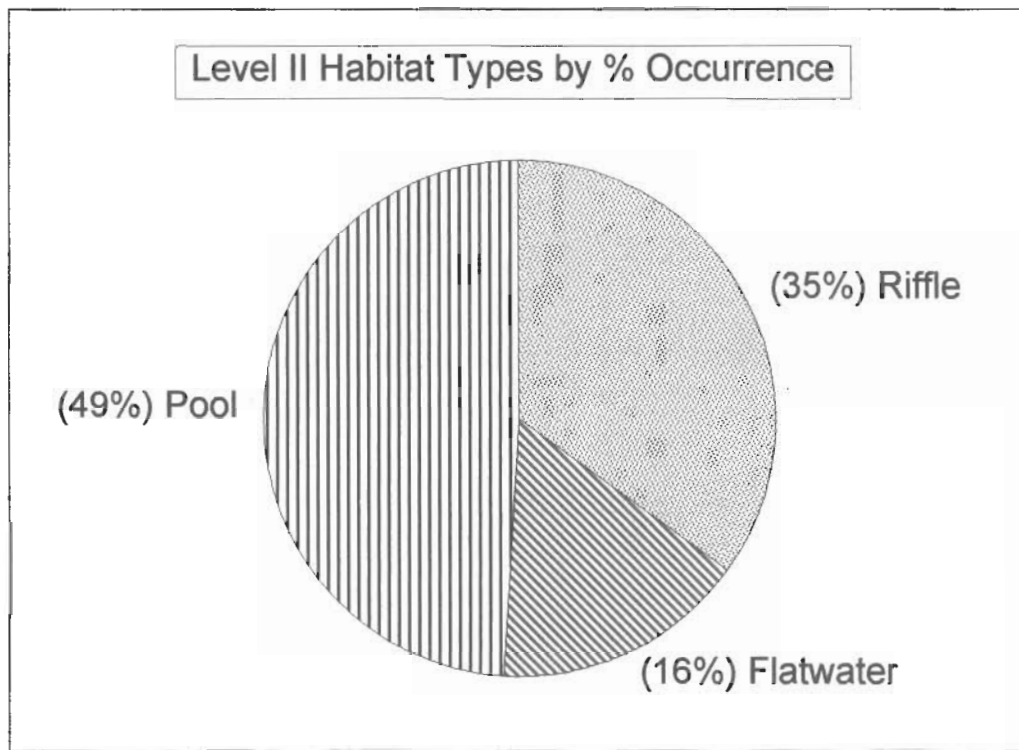
Channel Type: F2  
 Channel Length: 1854 ft.  
 Riffle/Flatwater Mean Width: 7 ft.  
 Total Pool Mean Depth: 1.6 ft.  
 Base Flow: 2.4 cfs  
 Water: 62-62°F Air: 68-80°F  
 Dom. Bank Veg.: Deciduous Trees  
 Bank Vegetative Cover: 58%  
 Dom. Bank Substrate: Bedrock  
 Embeddness Value: 1. 0% 2. 20%

Mean Canopy Density: 76%  
 Evergreen Component: 12%  
 Deciduous Component: 88%  
 Pools by Stream Length: 50%  
 Pools >=3 ft. deep: 22%  
 Mean Pool Shelter Rtn: 40  
 Dom. Shelter: Boulders  
 Occurrence of LOD: 0%  
 Dry Channel: 0 ft.

3. 0% 4. 47%

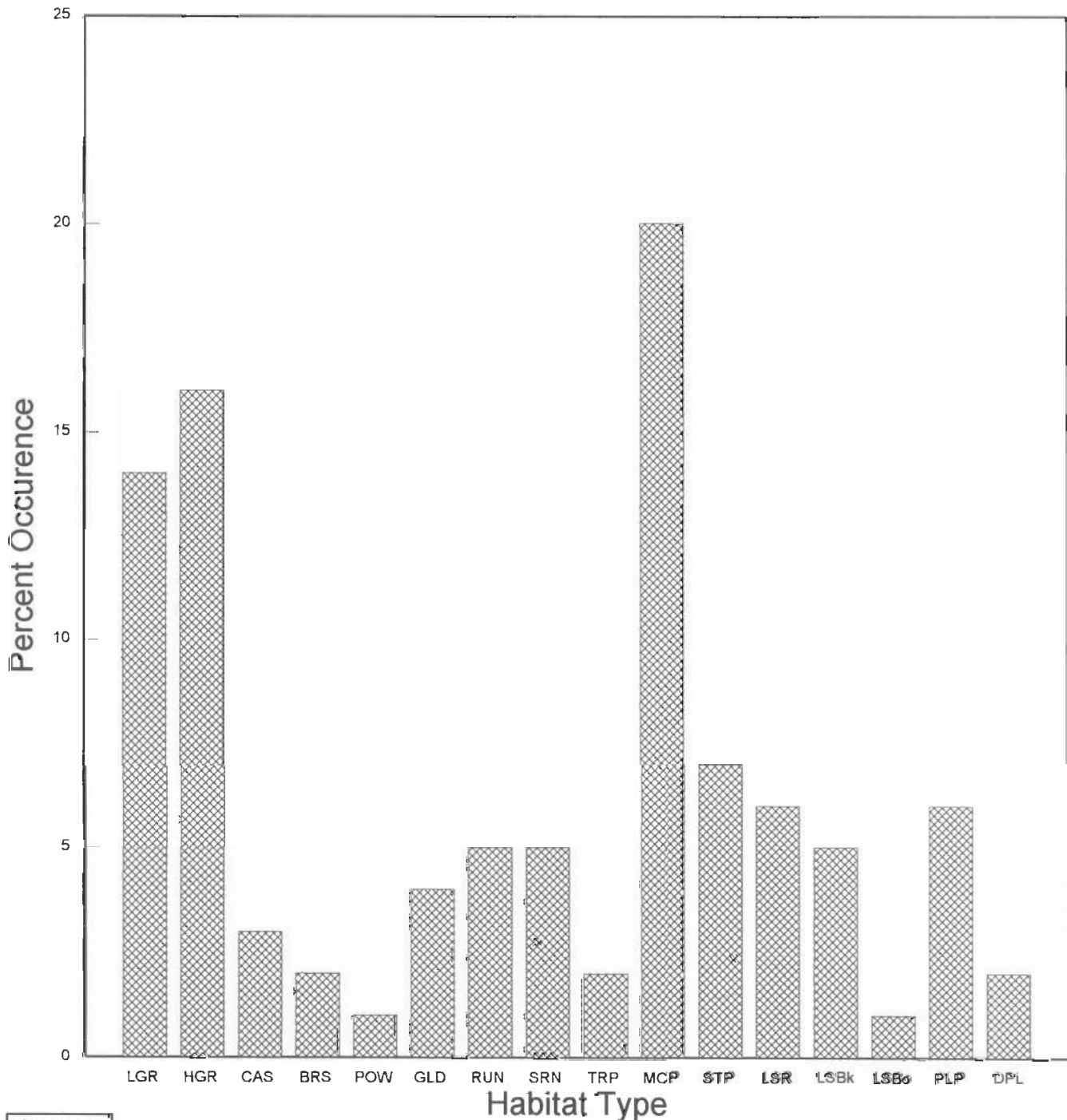
# Humbug Creek

## Level II Habitat Types



# Humbug Creek

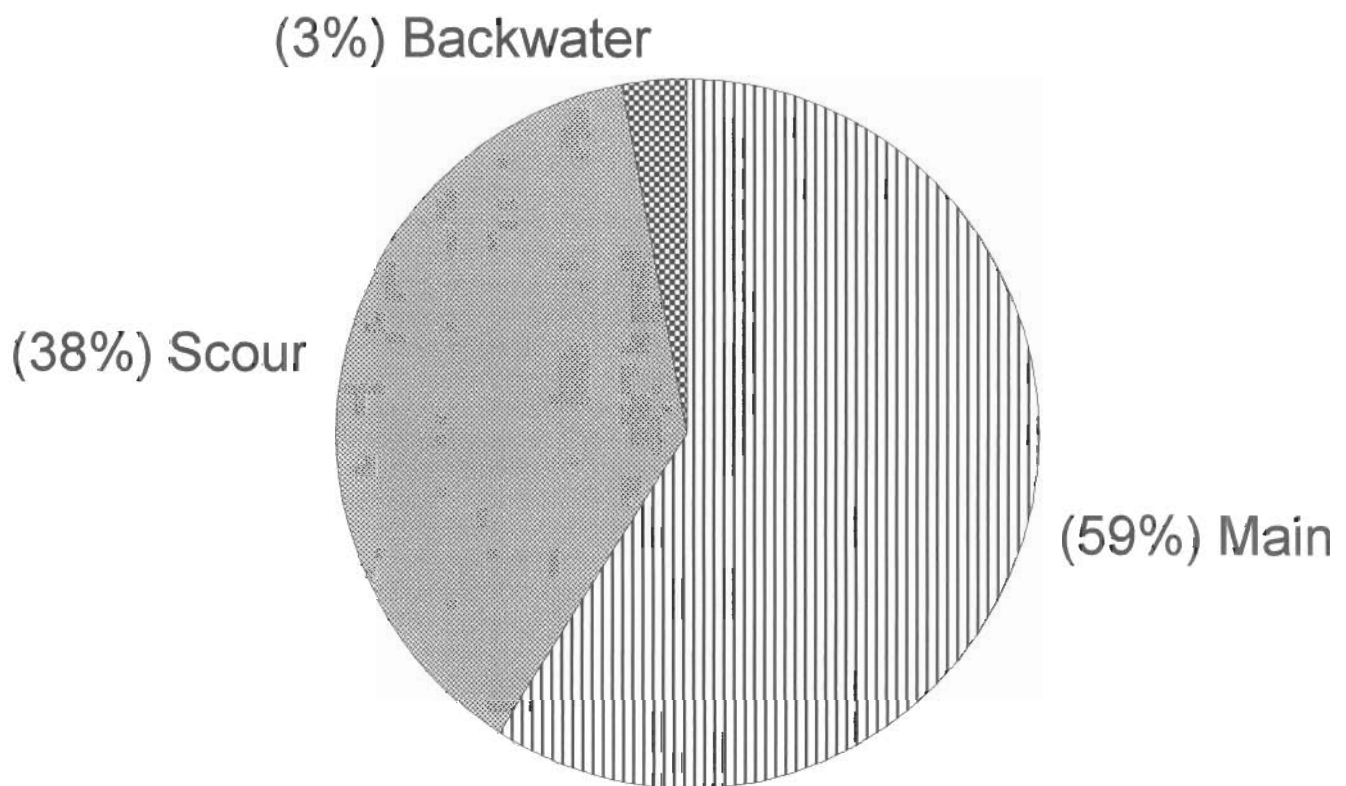
Level IV Habitat Types by % Occurrence



Graph 2

# Humbug Creek

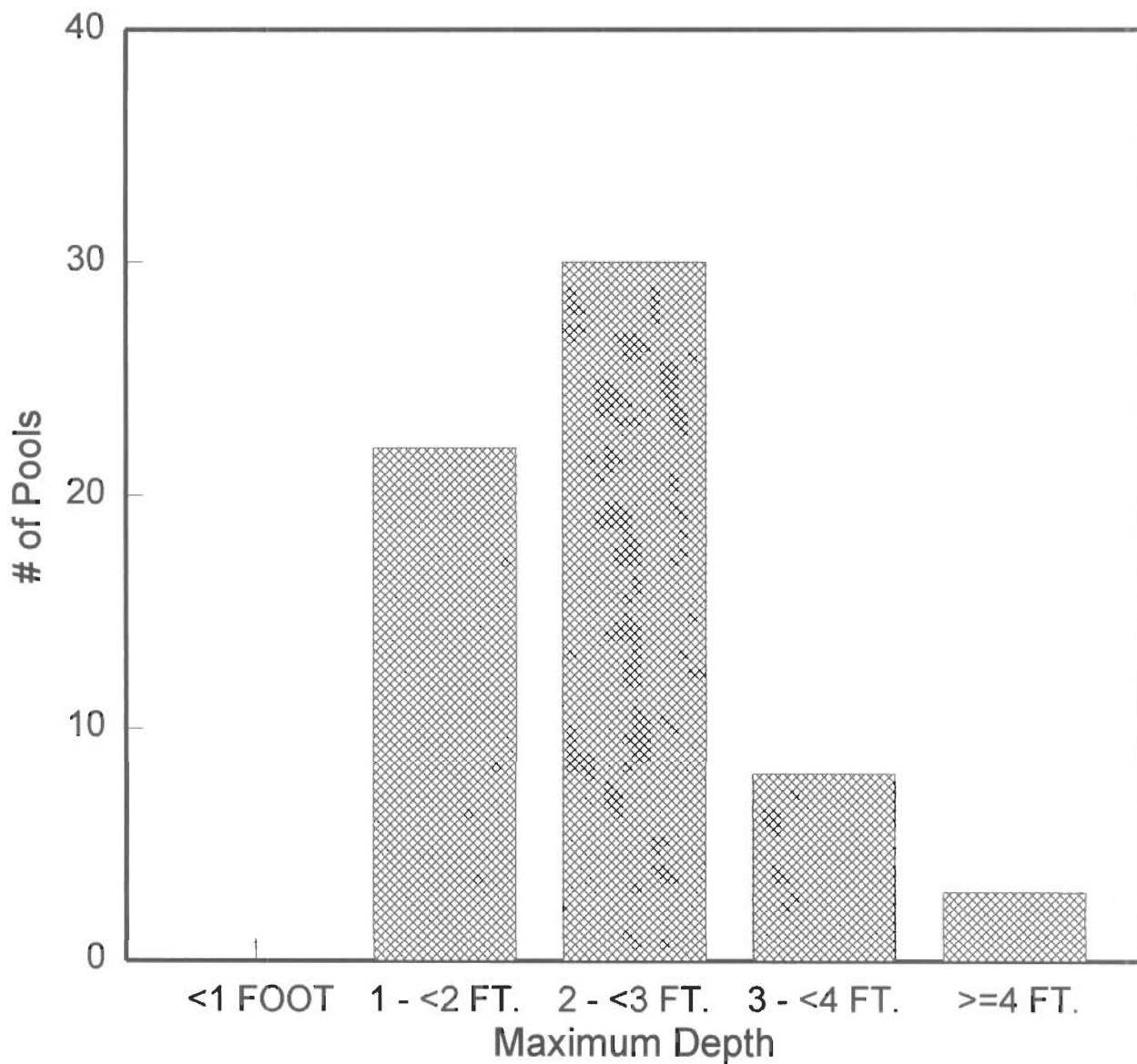
## Pool Habitat Types by % Occurrence



Graph 3

# Humbug Creek

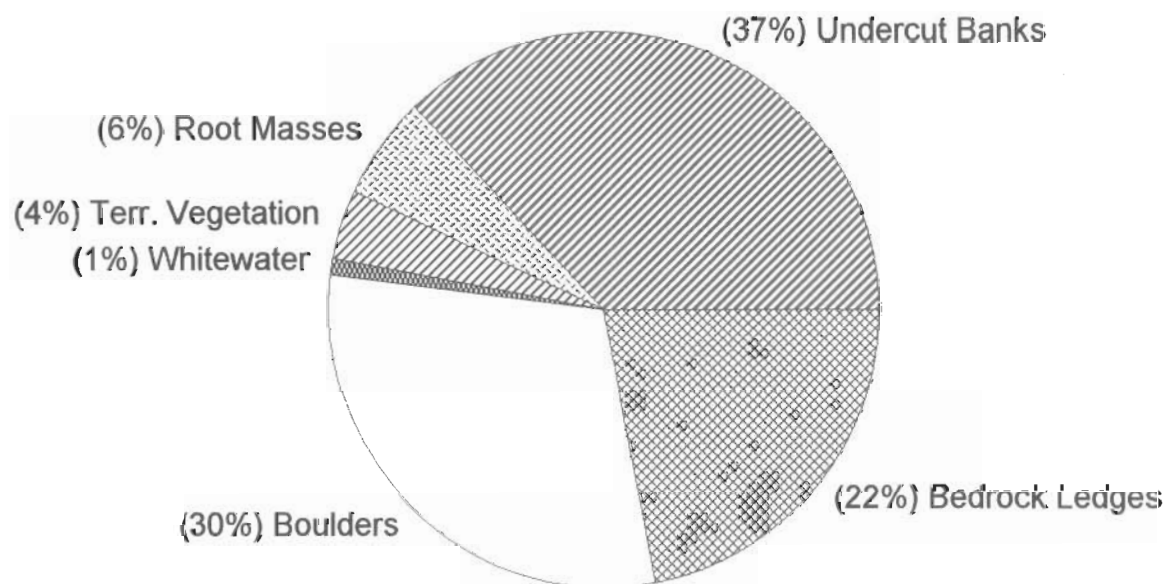
Maximum Depth in Pools



Graph 4

# Humbug Creek

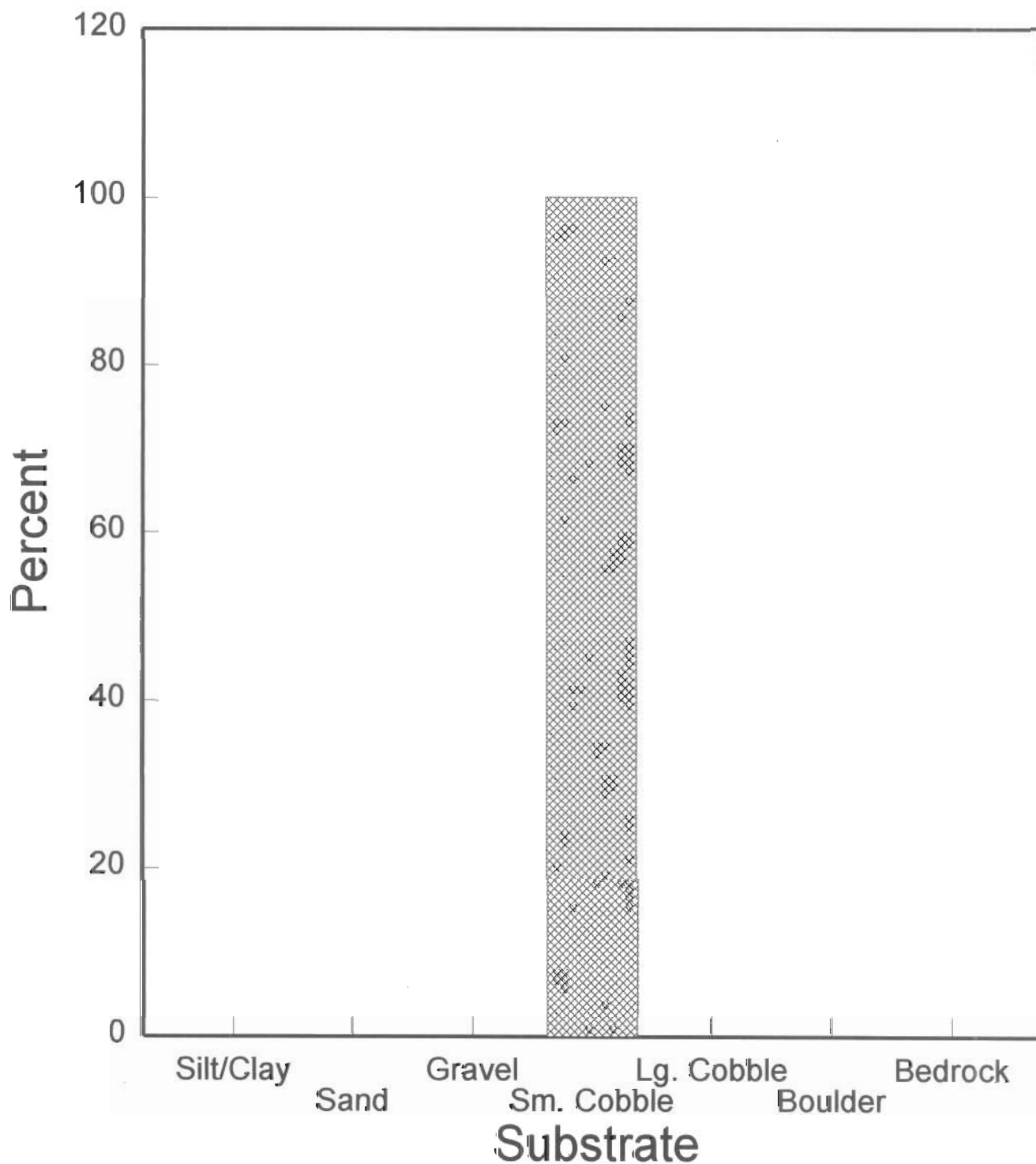
## Pool Shelter Types by % Area



**Graph 5**

# Humbug Creek

## Substrate Composition in Low Gradient Riffles

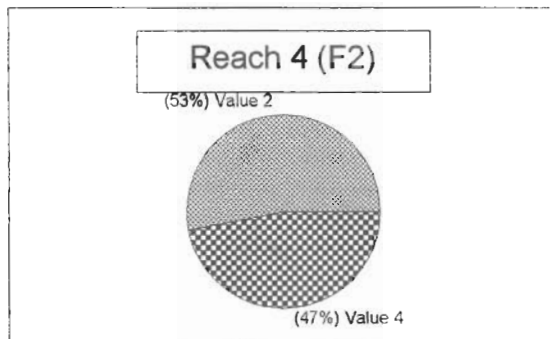
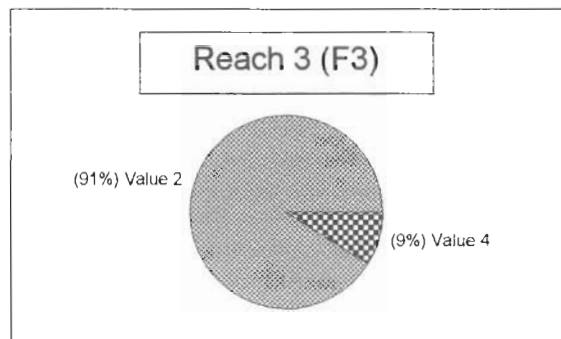
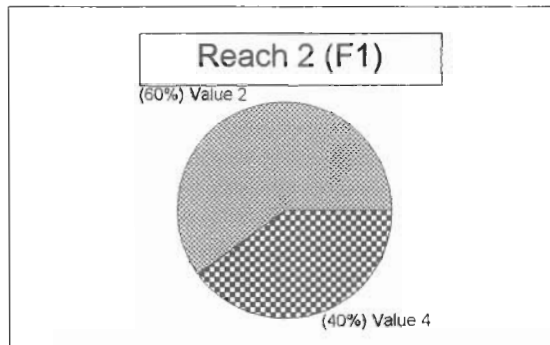
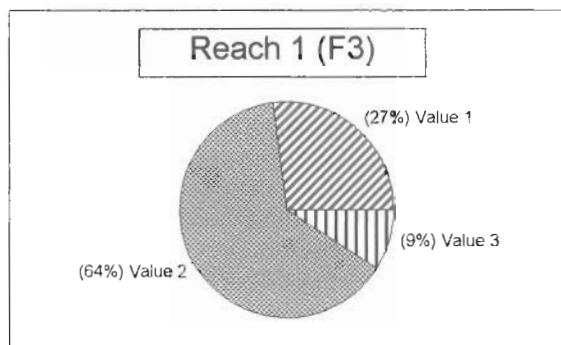


Graph 6



# Humbug Creek

## Percent Cobble Embeddedness by Reach

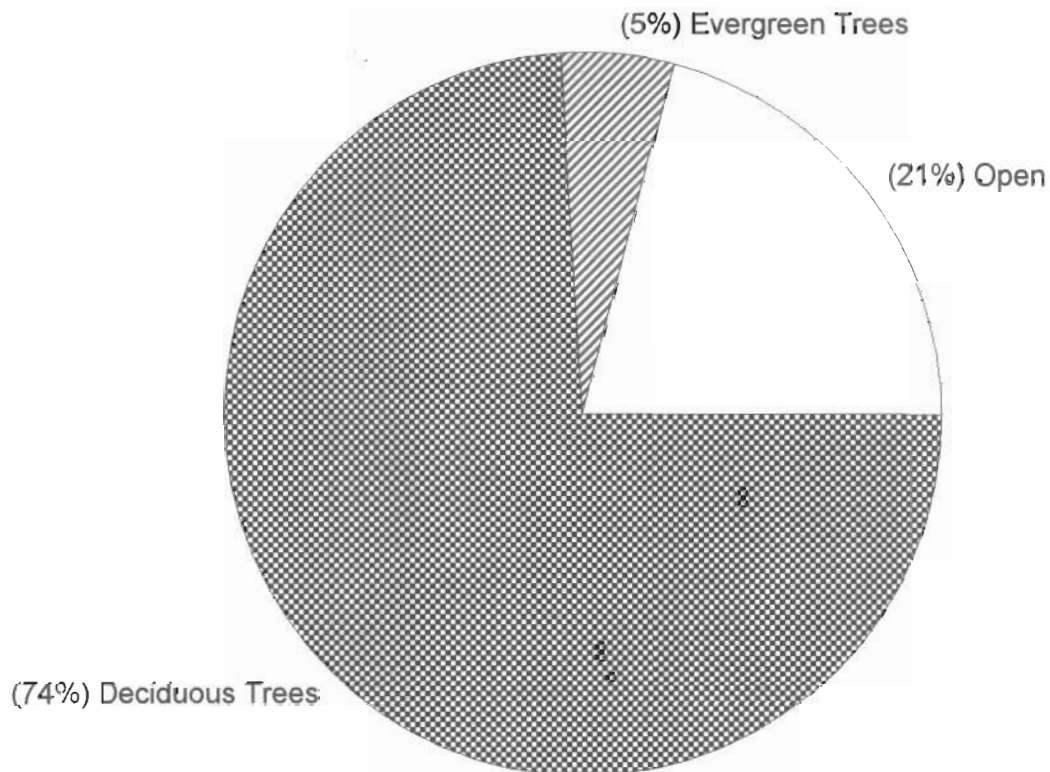


Value 1 = <25% Value 2 = 25-50% Value 3 = 51-75% Value 4 = >76%

Graph 7

# Humbug Creek

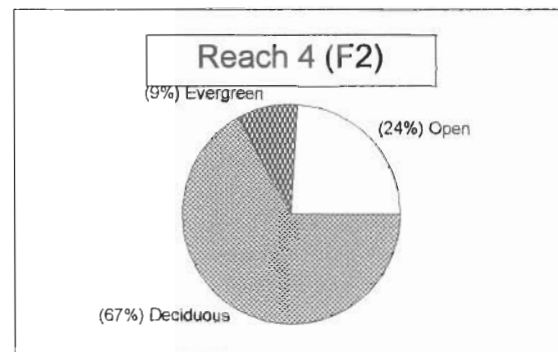
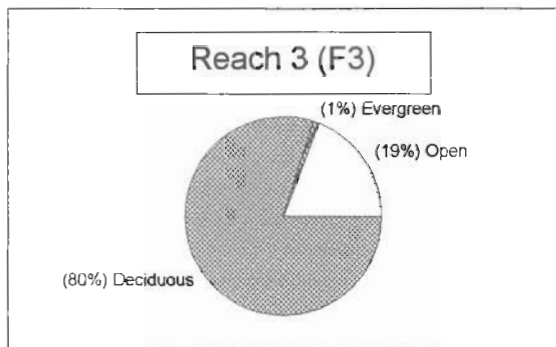
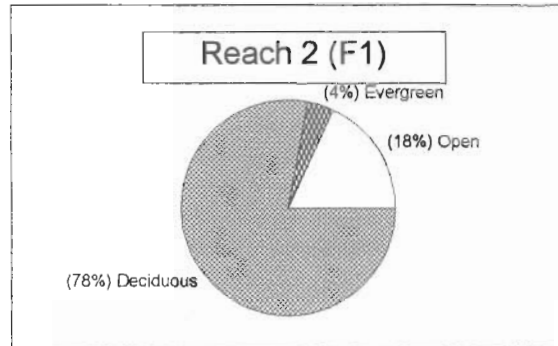
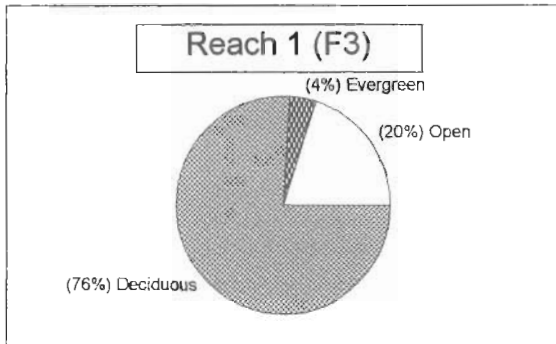
## Mean Percent Canopy



Graph 8

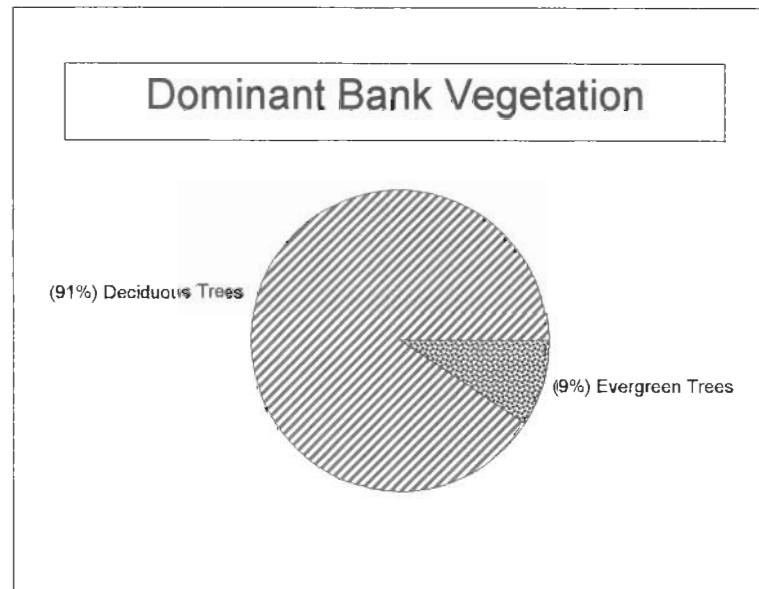
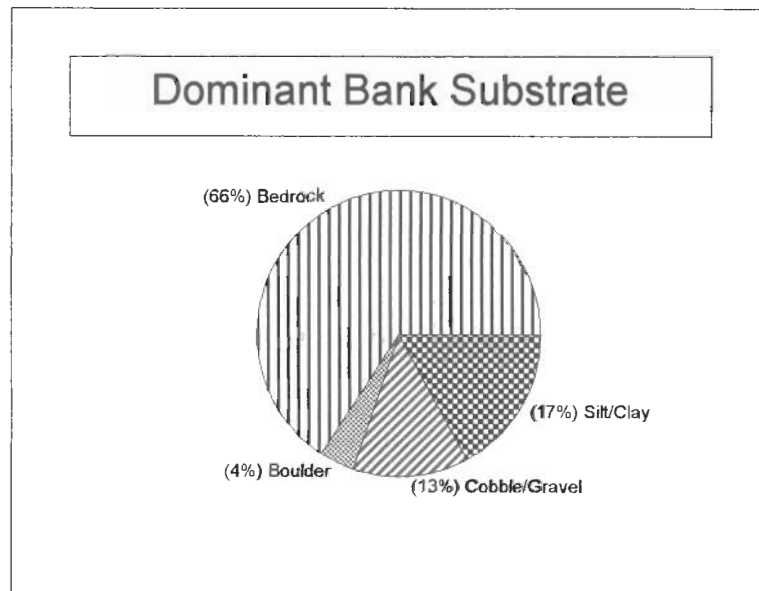
# Humbug Creek

## Percent Canopy By Reach



# Humbug Creek

## Percent Bank Composition



Graph 10